LIGHT FIXTURE(S) THIS SHEET

FIXTURE 'B' IS AN EXISTING COMPOSITE BULLET WITH VARIOUS LED PAR LAMPS
FIXTURE 'C' IS A NEW TUNABLE WHITE FIXTURE (SEE CATALOG SHEETS)
FIXTURE 'F' IS A NEW WALL MOUNTED LED FIXTURE (SEE CATALOG SHEETS)

CABINET #1 THIS SHEET	
R7-CAB 1	EMERGENCY LIGHTS
R8-CAB 1	LIGHTS
R5-CAB 1	EMERGENCY LIGHTS
R6-CAB 1	LIGHTS

TO CAVERN EXIT

CONNECTS TO SHEET E7.0

THIS CROSSING CONTAINS THE FOLLOWING ITEMS:
BRANCH CIRCUIT R5 AND R6

NEW ROUTING IN THIS AREA. SAWCUT TRAIL, FURNISH AND INSTALL BRANCH CIRCUITS IN SCHEDULE 40 PVC SLEEVES. COVER WITH MINUMUM TWO INCHES CONCRETE, SMOOTHED, TEXTURED AND COLORED TO MATCH ADJACENT TRAIL SURFACE.

Bridal Veil Falls

Neapolitan Falls (Flowstone)

Steep Slope

Peg Leg Hill

PHASE ONE WORK COMPLETED

PHASE TWO WORK

ROUTE CORD TIGHT TO THE CAVERN WALL AT THE TRAIL/ CAVERN WALL INTERFACE.

REPLACE THIS EXISTING FIXTURE B WITH TWO FIXTURE C. ONE FIXTURE C IS IN ABOUT THE SAME LOCATION AS FIXTURE B. THE OTHER FIXTURE C IS FURTHER BACK INTO A DEFILE TO ILLUMINATE A FORMATION.

ROUTE THE R5 BRANCH CIRCUIT DOWN INTO THE HOLLOW AREA UNDERNEATH IN THE SAME MANNER AS THE EXISTING CORDS.

NEW MAIN POWER FEEDER CABLE & EXISTING LEAKY FEEDER COMMUNICATIONS CABLE, LOOSE LAID. FOLLOW ROUTE OF EXISTING LEAKY FEEDER COMMUNICATIONS CABLE IN THIS AREA. ACTUAL ROUTE LOCATION AND CORRESPONDING LENGTH TO BE VERIFIED BY CONTRACTOR.

Up to Horses Barn

ROUTE CORD AND CABLE IN CRACKS & CREVICES OFF TRAIL.

DOWN TO RAY KELLY'S TUNNEL

CONTINUATION OF EXISTING POWER FEEDER CABLE; EXISTING LEAKY FEEDER COMMUNICATIONS CABLE

R5-CAB 1
R6-CAB 1
R7-CAB 1 UPS
R8-CAB 1
SW9-CAB 1
SW10-CAB 1
SW11-CAB 1
SW12-CAB 1

OVERLAYS FEATURES.

Dome to Upper Level

Moonmilk

THESE TWO SWITCHES, AND CABLES TO BOTH SWITCHES ARE EXISTING, INSTALLED IN PHASE ONE (SEE PHOTO E6.0-1)

PLAN VIEW

THIS CROSSING CONTAINS THE FOLLOWING ITEMS:
NEW MAIN POWER FEEDER CABLE
EXISTING LEAKY FEEDER COMMUNICATIONS CABLE
BRANCH CIRCUITS R7 AND R8
SWITCH LEADS SW11 AND SW12

NEW MAIN POWER FEEDER CABLE & EXISTING LEAKY FEEDER COMMUNICATIONS CABLE, LOOSE LAID. FOLLOW ROUTE OF EXISTING FEEDER FROM THIS POINT TO PARADISE ROOM (SHOWN ON SH. E7.0). NEW ROUTING AS SHOWN FROM THIS POINT TO STAIR 34 (SHOWN ON SH. E5.0). ACTUAL ROUTE LOCATION AND CORRESPONDING LENGTH TO BE VERIFIED BY CONTRACTOR.

ROUTE CORD AND CABLE IN CREVICES ON FORMATIONS OVER TRAIL.

AMPLIFIER FOR LEAKY FEEDER COMMUNICATION CABLE #2 OF 2

CONNECTS TO SHEET E5.0

THESE EXISTING DEVICES TO BE DEMOLISHED IN PHASE TWO

DIRECTION OF TRAVEL

SEE SHEET E5.0 FOR CONTINUATION OF CORD AND CABLE ROUTING.

R7-CAB 1 UPS
R8-CAB 1
SW12-CAB 1
CONTINUATION OF EXISTING POWER FEEDER CABLE; EXISTING LEAKY FEEDER COMMUNICATIONS CABLE

POST MOUNT TWO FIXTURE 'F IN THIS AREA

THERE ARE TWO PAIR OF FIXTURE B. WITH ONE FIXTURE IN EACH PAIR ON R8 AND THE OTHER FIXTURE IN THE PAIR ON R6

Brown Waterfall (Flowstone) to Grand Canyon Room & Ray Kelly Tunnel

UP TO PARADISE ROOM

CONNECTS TO SHEET E7.0

UP TO AREA OF STAIRWAY 42

Flathead Cherry Passage

Ray Kelly's Tunnel

Grand Steep Slope Brownies Battlefield

MOUNT FIXTURE C ON MIDDLE POST OF THE RAILING

Brown Waterfall Room

REMOVE EXISTING FIXTURE B
REPLACE WITH FIXTURE C

ROUTE CABLES AND CORDS IN CRACKS & CREVICES ON FORMATIONS OVER TRAIL.

THIS CROSSING CONTAINS THE FOLLOWING ITEMS:
NEW MAIN POWER FEEDER CABLE
EXISTING LEAKY FEEDER COMMUNICATIONS CABLE
NEW BRANCH CIRCUITS R7 AND R8
NEW .SWITCH LEAD SW12

SWITCH MOUNTING NOTES FOR THIS SHEET

1. MOUNT SWITCHES SW9-CAB 1 AND SW10-CAB 1 IN A INDIVIDUAL BOXES SURFACE MOUNTED ON A ROCK TURNED SIDEWAYS FROM THE TRAIL IN THE SAME LOCATION AS THE EXISTING SWITCHES.
2. SWITCH SW11-CAB 1 IS A FOOT SWITCH. THE CONTRACTOR MAY REUSE THE EXISTING FOOT SWITCH CONNECTED TO THE NEW SYSTEM WITH NEW CORD VIA A NEW JUNCTION BOX.

CAVERN DRAWING KEY PLAN

DRAWING E-6.0

PLAN VIEW

Upper Level
Lower Level
Passage Below

PHOTO E 6.0-1
SWITCH 9 AND 10, CABINET 1

GENERAL NOTES:

A. AT ANY LOCATION WHERE ELECTRICAL BRANCH CIRCUIT OR SWITCH CABLES ARE TO BE LOOSE LAID (NOT COVERED WITH RUBBLE), USE FLEXIBLE CORD, HARD SERVICE, WET LOCATION TYPE SOOW.

B. AT ANY LOCATION WHERE ELECTRICAL BRANCH CIRCUIT OR SWITCH CABLES ARE TO BE COVERED WITH RUBBLE, USE CONDUCTORS IN PLASTIC COATED FLEXIBLE CONDUIT, OR PLASTIC COATED MC CABLE, OR TEK CABLE AT CONTRACTOR'S OPTION.

C. AT ANY LOCATION WHERE ELECTRICAL BRANCH CIRCUIT OR SWITCH CABLES ARE TO BE FASTENED TO THE CAVERN WALL, FASTENED TO A CONCRETE WALL, OR FASTENED TO THE SIDE OF OR UNDERNEATH CONCRETE STEPS, USE PLASTIC COATED MC CABLE OR TEK CABLE AT THE CONTRACTOR'S OPTION.

D. USE JUNCTION BOX AT ANY TRANSITION BETWEEN CORD AND CABLE; CONCEAL J-BOX FROM TRAIL VIEW BEHIND NATURAL CAVERN FORMATION OR UNDER RUBBLE.

E. POWER FEEDER CABLE TO BE TEK CABLE THROUGHOUT THIS PHASE OF PROJECT.

F. ROUTE POWER FEEDER CABLE TO FOLLOW ROUTE OF EXISTING LEAKY FEEDER COMMUNICATIONS CABLE.

G. THE AREA AROUND THE ENTRANCE TO RAY KELLE'S TUNNEL IS ACCESSIBLE BY CRAWLING. THERE ARE A NUMBER OF FISSURES WHICH BE USED TO ROUTE THE CORD TO THE VARIOUS LIGHT FIXTURES IN THIS AREA. ADJUSTMENT OF THE EXACT LOCATION OF THE TRAIL CROSSING WILL REQUIRED BASED ON THE APPROACH TO EACH SIDE OF THE CROSSING.

N
MN - 14°
0 5 10 20 30
Scale in Feet

PROJECTED PROFILE
(Along Tourist Trail)

CONNECTS TO SHEET E7.0

CONNECTS TO SHEET E5.0

Green Well
lowest known point in cave

Horses Barn

Peg Leg Hill

to Ray Kelly Tunnel

Depth in Feet
-280
-290
-300
-310
-320
-330
-340

THE STAIRS SHOWN ARE THE ORIGINAL STAIRS AT THE TIME OF MAPPING

TEK CABLE UP TO SWITCH OR LIGHT FIXTURE
JUNCTION BOX AT EACH LIGHT FIXTURE AND/ OR SWITCH LOCATION
ATTACH MC CABLE TO WALL AT FLOOR WITH CABLE CLAMPS; COVER WITH LOOSE STONE RUBBLE
NATURAL STONE OR CONCRETE EXISTING TUNNEL FLOOR

TUNNEL CABLE AND J-BOX DETAIL - LONGITUDINAL SECTION

NOT TO SCALE

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Helena, MT 59620-0701

MONTANA
MICHAEL T. FUSSELL
7962 E
REGISTERED PROFESSIONAL ENGINEER

FUSSELL ENGINEERING
CONSULTING AND DESIGN
2435 DIXON STREET
MISSOULA, MT 59801
(406) 721-6996
fus@aol.com

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ROUTE THE NEW POWER FEEDER CABLE, BRANCH CIRCUITS, AND CONTROL CABLES LOOSE LAID ON THE CAVE FLOOR IN THE SAME LOCATION AS THE EXISTING FEEDERS WHICH IS ALONG THE BACK WALL OF THIS PHOTO. FOLLOW EXISTING LEAKY FEEDER COMMUNICATIONS CABLE.

SAME FORMATION BOTH PHOTOS

PHOTO E 6.1-1
NEW POWER FEEDER AND EXISTING COMMUNICATIONS LEAKY FEEDER PATH BROWN WATERFALL AREA

ROUTE THE NEW POWER FEEDER CABLE, BRANCH CIRCUITS, AND CONTROL CABLES LOOSE LAID ON THE CAVE FLOOR BEHIND THESE LARGE ROCKS AS INDICATED. FOLLOW EXISTING LEAKY FEEDER COMMUNICATIONS CABLE.

THERE IS CONSIDERABLE ROOM BEHIND THESE ROCKS.

SAME FORMATION BOTH PHOTOS

PHOTO E 6.1-2
NEW POWER FEEDER AND EXISTING COMMUNICATIONS LEAKY FEEDER PATH BROWN WATERFALL AREA

ROUTE THE NEW POWER FEEDER CABLE, BRANCH CIRCUITS, AND CONTROL CABLES LOOSE LAID ON THE CAVE FLOOR BEHIND THESE LARGE ROCKS AS INDICATED. FOLLOW EXISTING LEAKY FEEDER COMMUNICATIONS CABLE.

THERE IS CONSIDERABLE ROOM BEHIND THESE ROCKS.

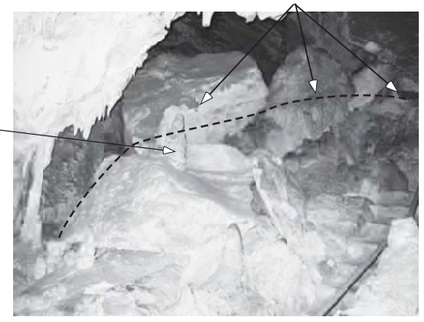


PHOTO E 6.1-3
NEW POWER FEEDER AND EXISTING COMMUNICATIONS LEAKY FEEDER PATH BROWN WATERFALL AREA

THE AREA ABOVE THE TRAIL IS HOLLOW AND THE FEEDERS AND CONDUCTORS CAN BE ROUTED ABOVE THE TRAIL TO THE OTHER SIDE (RIGHT SIDE IN THE PICTURE) OF THE TRAIL AND THENCE DOWN ALONG THE TRAIL IN THE SAME LOCATION AS THE EXISTING FEEDERS. FOLLOW EXISTING LEAKY FEEDER COMMUNICATIONS CABLE.

PHOTO E 6.1-4
NEW POWER FEEDER AND EXISTING COMMUNICATIONS LEAKY FEEDER PATH CROSSING THE TRAIL ABOVE BROWN WATERFALL AREA

ROUTE THE NEW POWER FEEDER CABLE, SWITCH CONTROL CABLES, AND BRANCH CIRCUITS LOOSE LAID ON THE CAVERN FLOOR IN THE CREVICE TO THE SIDE OF THE EXISTING TRAIL IN THE SAME MANNER AS THE EXISTING CABLING. FOLLOW EXISTING LEAKY FEEDER COMMUNICATIONS CABLE.

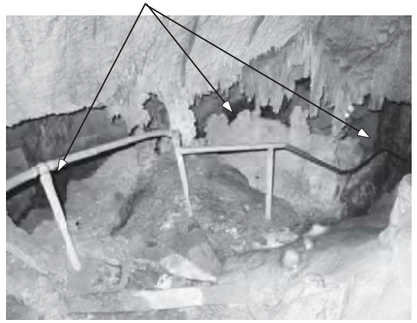


PHOTO E 6.1-5
NEW POWER FEEDER AND EXISTING COMMUNICATIONS LEAKY FEEDER PATH BELOW BROWN WATERFALL AREA

NEW ROUTING IN THIS AREA. EXISTING TRAIL IS SAW CUT AS INDICATED. FURNISH AND INSTALL BRANCH CIRCUITS IN EXISTING SCHEDULE 40 PVC SLEEVES AS POSSIBLE.

BRANCH CIRCUITS UP FROM CREVICE BELOW OFF OF TRAIL, JUST TO LEFT OF PHOTO

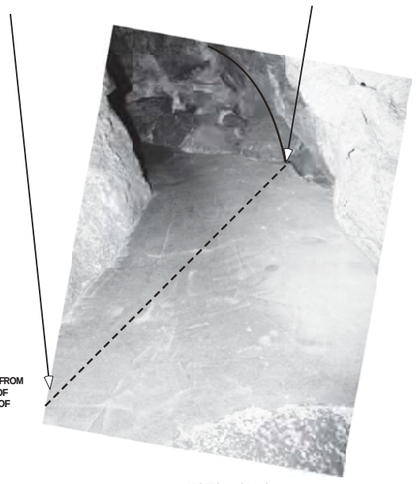
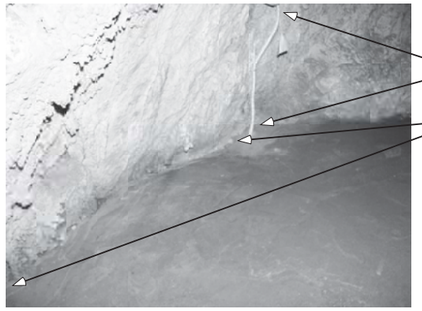


PHOTO E 6.1-6
NEW POWER FEEDER AND EXISTING COMMUNICATIONS LEAKY FEEDER PATH NEAR STAIR 41 BELOW BROWN WATERFALL AREA



ROUTE THE BRANCH CIRCUIT IN CONDUIT UP FROM THE FLOOR LEVEL TO THE FIXTURE 'F'. ATTACH TO EXISTING TUNNEL WALL.

ROUTE THE NEW BRANCH CIRCUIT CORD AT THE TRAIL/ CAVERN WALL INTERFACE OVER TO A CRACK AND THENCE DOWN TO CONNECTION WITH THE BRANCH CIRCUIT SUPPLY.

WHEN THIS PHASE OF THE WORK IS COMPLETE, SAFETY OFF THE EXISTING LIGHT FIXTURE FEED AT ITS ACCESSIBLE SUPPLY AND THEN CUT OFF THE WIRE COMING UP FROM THE CONCRETE. COIL UP AND LEAVE IN PARADISE ROOM FOR THE OWNER TO REMOVE FROM THE CAVE.

PHOTO E 6.1-7
BRANCH CIRCUIT SUPPLY TO A NEW FIXTURE 'F'

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Helena, MT 59620-0701

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MICHAEL T. FUSSELL
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FUSSELL ENGINEERING
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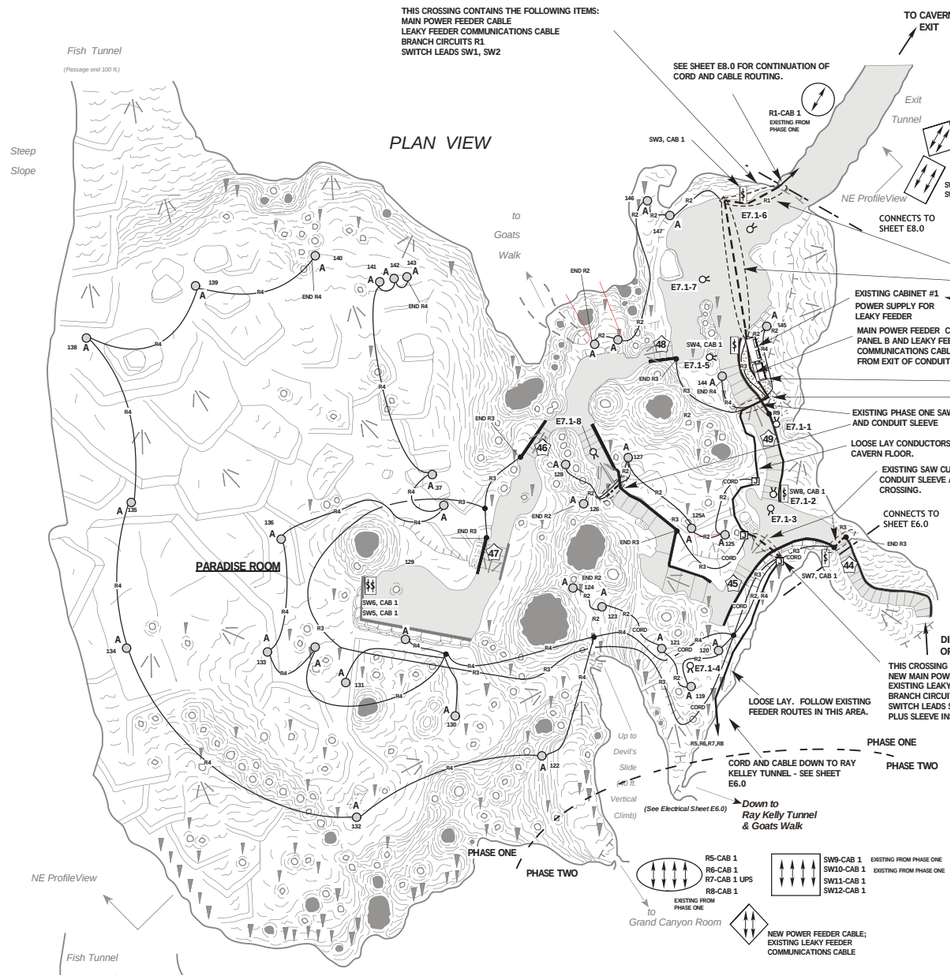
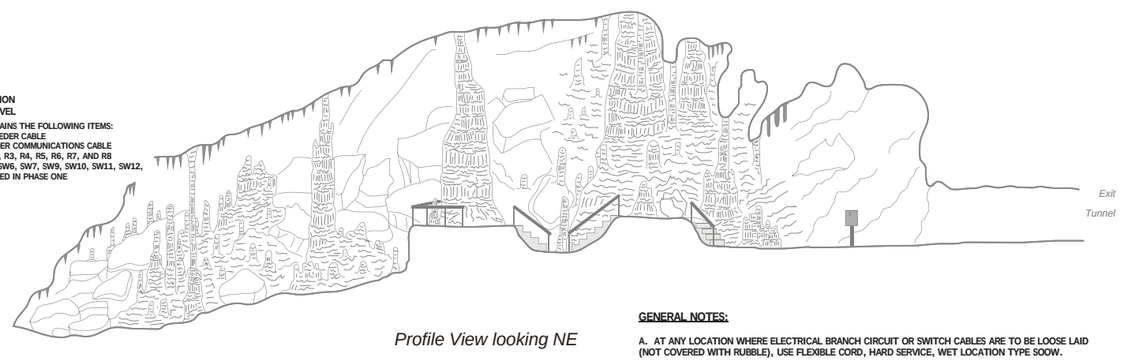
LIGHT FIXTURE(S) THIS SHEET

FIXTURE 'A' IS AN EXISTING COLOR KINETICS RGB LED

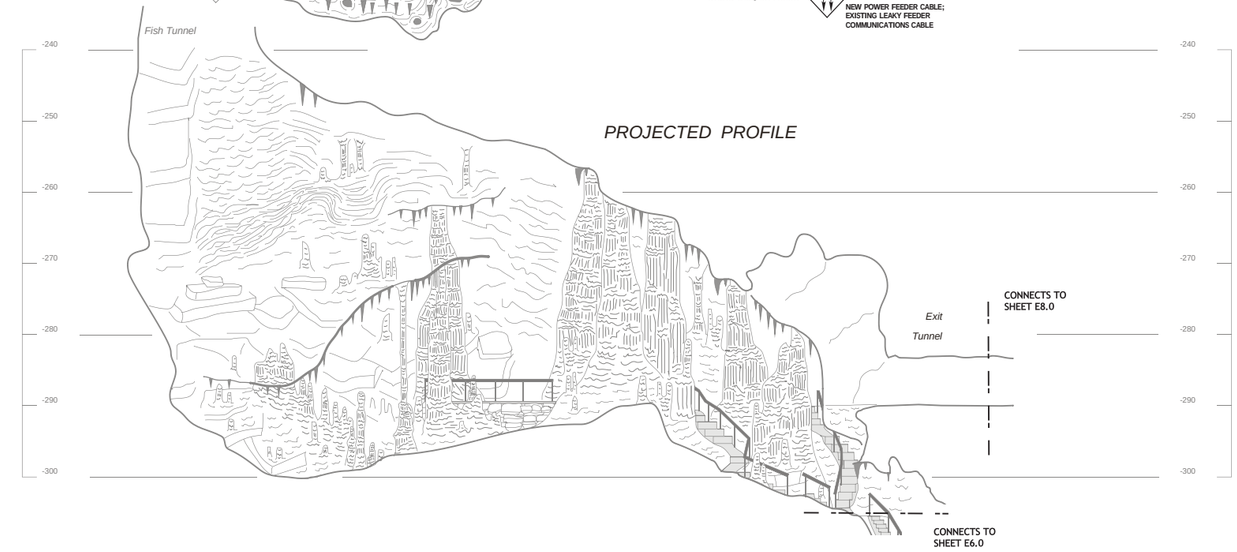
PLAN VIEW



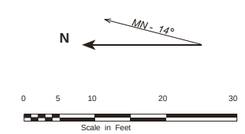
CABINET #1 THIS SHEET	
R1-CAB 1	EMERGENCY LIGHTS (EXIT TUNNEL)
	EMERGENCY LIGHTS (REC)
R2-CAB 1	ROOM LIGHTS (FIRST LAYER) ON/ OFF
R3-CAB 1	EMERGENCY LIGHTS PARADISE ROOM
R4-CAB 1	ROOM LIGHTS (SECOND LAYER) ON/ OFF
R5-CAB 1	EMERGENCY LIGHTS } ENTRANCE SIDE OF PEG LEG HILL
R6-CAB 1	LIGHTS
R7-CAB 1	EMERGENCY LIGHTS
R8-CAB 1	LIGHTS
R9-CAB 1	EMERGENCY LIGHTS RAILING 49



Profile View looking NE



THE STAIRS SHOWN ARE THE ORIGINAL STAIRS AT THE TIME OF MAPPING



SWITCH MOUNTING NOTES FOR THIS SHEET

1. SWITCHES SW4-CAB 1, SW8-CAB 1, SW7-CAB 1, SW5-CAB 1, AND SW6-CAB 1 ARE MOUNTED ON THE CORRESPONDING RAILINGS.
2. SWITCH SW3-CAB 1 IS SECURED TO AN EXISTING ROCK AND TUCKED BACK AROUND FROM THE TRAIL (SEE PHOTOS E7.1).

PHASE 2 WORK RAILING LED LIGHT REPLACEMENT FOR RAILINGS ON THIS SHEET

THE EXISTING LED LIGHTING IN ALL RAILINGS SHALL BE REPLACED. SEE THE RAILING DRAWINGS FOR DETAILS OF RAILING LENGTH. THE CONTRACTOR SHALL REUSE THE EXISTING BRANCH CIRCUIT SUPPLY TO THE EXISTING RAILINGS. THE NEW REPLACEMENT LED LIGHTING IN THE EXISTING RAILING SHALL USE NEW REMOTE BALLASTS IN NEW NEMA 4X COMPOSITE ENCLOSURE HIDDEN IN THE ROCKS NEAR THE RAILING.

NOTE THAT IT MIGHT BE POSSIBLE TO USE A SINGLE DRIVER INSTALLED AT THE CABINET AND SUPPLY DC TO ALL OF THE RAILINGS VIA EXISTING CORD R3. USING A SINGLE DRIVER FOR ALL OF THE RAILING LIGHTING IS DEPENDENT ON THE DC AMP SUPPLY CAPABILITY OF THE NEW DRIVER AND THE TOTAL DC DRAW OF THE NEW RAILING LED STRIPS. THE RESULTING DC LOAD CURRENT CANNOT EXCEED THE AMPACITY OF THE #12 CONDUCTORS IN EXISTING R3 CORD.

ASSUMING MULTIPLE DRIVERS ARE REQUIRED: TO INSTALL THE REMOTE DRIVER, THE CONTRACTOR SHALL REMOVE THE EXISTING LED STRIPS AND THE EXISTING DRIVER IN THE RAILING SUPPORT POST. THE BRANCH CIRCUIT CORD SUPPLYING THE SPECIFIC RAILING IS CUT AND THE REMOTE BALLAST(S) (IN THE ENCLOSURE) IS INSTALLED IN THE BRANCH CIRCUIT CORD.

THE NEW DRIVERS ARE SUPPLIED AT 120 VAC USING THE EXISTING BRANCH CIRCUIT CORD. THE SECTION OF THE CORD THAT SUPPLIED THE ORIGINAL POST MOUNTED DRIVER IS NOW BEING USED TO SUPPLY THE NEW LED STRIPS WITH DC. THUS IT IS NOT NECESSARY TO ADD A NEW CIRCUIT INTO THE POST. NOTE ALSO, THAT THE EXISTING CORD MAY NEED TO BE EXTENDED INSIDE THE POST TO REACH THE NEW LED STRIPS OR MAKE SURE THAT THE LED STRIP HAS SUITABLY LONG PIG TAIL CONDUCTORS. USE WATERPROOF SPLICES FOR EXTENDING THE CORD AND/ OR CONNECTIONS TO THE LED STRIPS.

EXISTING LED STRIP REMOVAL: THE EXISTING LED STRIPS ARE GENERALLY ABOUT 2 FEET LONG, IN MULTIPLE SECTIONS. THEY ARE HELD IN THE RAILING WITH DOUBLE SIDED TAPE. SO REMOVE THE DOUBLE SIDED TAPE. CLEAN UP THE TAPE RESIDUE INSIDE AND OUTSIDE OF THE RAILING SLOT. THEN CAREFULLY CUT THE DC WIRING SUPPLYING THE SPECIFIC STRIP AND SUPPLYING THE NEXT STRIP. RETAINING THIS EXISTING WIRING WILL REDUCE THE NEED TO FISH NEW WIRING DOWN THE RAILING AS THERE COULD BE RESTRICTIONS AT EACH POST CONNNECTION.

EXISTING RAILING: COLE LIGHTING LRSP-RE-LED. THE RAILING SLOT IS TURNED 30° FROM VERTICAL.

EXISTING LED STRIPS MADE BY:
Prolume Inc.
525 Fan Hill Road
Monroe, CT 06468
Phone: 203.268.7778
Fax: 203.268.7855
Jim Carson was involved on the original job.

GENERAL NOTES:

A. AT ANY LOCATION WHERE ELECTRICAL BRANCH CIRCUIT OR SWITCH CABLES ARE TO BE LOOSE LAID (NOT COVERED WITH RUBBLE), USE FLEXIBLE CORD, HARD SERVICE, WET LOCATION TYPE SOOW.

B. AT ANY LOCATION WHERE ELECTRICAL BRANCH CIRCUIT OR SWITCH CABLES ARE TO BE COVERED WITH RUBBLE, USE CONDUCTORS IN PLASTIC COATED FLEXIBLE CONDUIT, OR PLASTIC COATED MC CABLE, OR TEK CABLE AT CONTRACTOR'S OPTION.

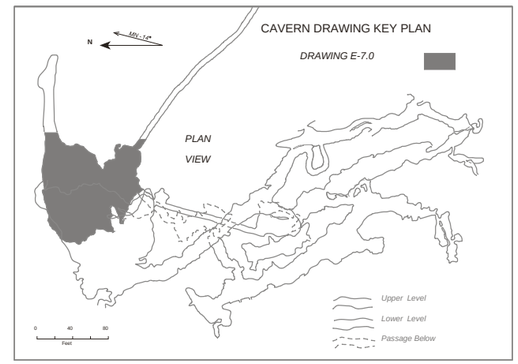
C. AT ANY LOCATION WHERE ELECTRICAL BRANCH CIRCUIT OR SWITCH CABLES ARE TO BE FASTENED TO THE CAVERN WALL, FASTENED TO A CONCRETE WALL, OR FASTENED TO THE SIDE OF OR UNDERNEATH CONCRETE STEPS, USE PLASTIC COATED MC CABLE OR TEK CABLE AT THE CONTRACTOR'S OPTION.

D. USE JUNCTION BOX AT ANY TRANSITION BETWEEN CORD AND CABLE; CONCEAL J-BOX FROM TRAIL VIEW BEHIND NATURAL CAVERN FORMATION OR UNDER RUBBLE.

E. POWER FEEDER CABLE TO BE TEK CABLE THROUGHOUT THIS PHASE OF PROJECT.

F. ROUTE POWER FEEDER CABLE TO FOLLOW ROUTE OF EXISTING LEAKY FEEDER COMMUNICATIONS CABLE.

G. NOTE THAT THE EXISTING UPS IN CABINET 1 IS BEENING MOVED TO CABINET 3.



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